



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,464	01/03/2001	Hideki Yamanaka	826.1662	1562

21171 7590 10/21/2004

STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

STRANGE, AARON N

ART UNIT	PAPER NUMBER
----------	--------------

2153

DATE MAILED: 10/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

2/3

Office Action Summary

Application No.

09/752,464

Applicant(s)

YAMANAKA, HIDEKI

Examiner

Aaron Strange

Art Unit

2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-6 and 8-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-6 and 8-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The objections to the drawings have been corrected satisfactorily and the explanation of Figure 1 is sufficient to overcome the objections cited in the first Office action.

Claim Objections

2. The amendment to claim 6 and the cancellation of claim 19 are sufficient to overcome the objections to these claims cited in the first Office action.

Response to Arguments

3. Applicant's arguments with respect to claims 1,9,12-14 and 15 have been considered but are moot in view of the new ground(s) of rejection.
4. Applicant's arguments with regard to claims 2,4-6,8,10,11,16, and 17, filed 7/22/2004 have been fully considered but they are not persuasive.
5. With regard to Applicant's assertion that Toporek does not teach that "converting a protocol of the received data into another protocol on a transmission control protocol, the another protocol allowing a larger amount of data to be transferred at a time" (Page 12, Lines 1-2 of reply), the Examiner respectfully disagrees. As cited in the first office Action, Col 7, Lines 27-36 of Toporek clearly states "The present protocol offers adequately large window sizes for transmission between the satellite gateways....The present gateway becomes a buffer for the network, allowing high throughput

independent of the window size of the clients and servers.” (emphasis added). Use of the disclosed protocol, allowing high throughput, would allow a larger amount of data to be transferred at a time.

6. With regard to Applicant’s assertion that Toporek does not teach “continuously using another protocol”, the Examiner respectfully disagrees. Since there is only one connection between the client and server (Fig. 1,2, and 3E), and all packets between them must travel across the satellite connection, the protocol is continuously used.

7. With regard to claims 5 and 8, and Applicant’s assertion that Kirkby does not teach that “a charging device determines whether or not the request from the client is a request to be issued to the server”, the Examiner respectfully disagrees. In order for the proper party to be charged for use of the system, the charging device must determine which client sent the request as well as the server which the request is intended for. Once this has been determined, the service provider and/or client can be appropriately charged for using the link.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1,2,4-6, and 8-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 2153

10. With regard to claims 2,6,10,11,16, and 17, the limitation “another protocol on a transmission control protocol” is unclear. The portions of the specification cited as support for this amendment (Pages 12-19, starting at line 25, and pages 23-24, starting at line 10) describe the use of a large TCP window to increase the maximum communication rate of the transmission. This fails to sufficiently define the “another protocol on a transmission control protocol”, as changing the window size of a TCP connection is not converting the protocol into another protocol, but merely changing parameters of the TCP connection.

11. With further regard to claims 2,6,10,11,12,16, and 17, the limitation “a transmission control protocol” is unclear. It is unclear if Applicant intends to refer to the well-known Transmission Control Protocol defined in RFC 793 and part of the TCP/IP protocol suite, or another “transmission control protocol”. Since Applicant has referred to the well-known TCP in Page 19, Lines 1-2 of the specification, this term has been interpreted as referring to the well-known TCP for the purpose of applying prior art. If this interpretation is correct, the claim should be amended to recite “the Transmission Control Protocol”.

12. With further regard to claim 6, the limitation “the data obtained by converting... and by multiplexing...and transmitted to the network continuously” is unclear. In particular, the phrase “and transmitted to” is unclear. For the purpose of applying prior art, the claim has been interpreted to mean that the data is transmitted to the network continuously using the another protocol.

13. With regard to claim 12, the limitation “a multiplexing protocol on a transmission control protocol” is unclear. The portions of the specification cited as support for this amendment (Pages 12-19, starting at line 25, and pages 23-24, starting at line 10) describe the use of a large TCP window to increase the maximum communication rate of the transmission. This fails to sufficiently define the “a multiplexing protocol on a transmission control protocol”, as changing the window size of a TCP connection is not a new protocol “on a transmission control protocol”, but merely changing parameters of the TCP connection.

14. All claims not individually rejected are rejected by virtue of their dependency from the above claims.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

16. Claim 12 is rejected under 35 U.S.C. 102(e) as being anticipated by Toporek et al. (US 6,460,085).

17. With regard to claim 12, Toporek discloses a communicating method, comprising: forming a virtual tunnel (TCP over satellite) having a multiplexing protocol

Art Unit: 2153

on a transmission control protocol (XTP, modified TCP or XTP-like protocol) hiding a network delay (connection appears to occur immediately) that takes place between a server and a client (client and server have no knowledge of the satellite link) (Col 13, Lines 7-21); and continuously using (Col 11, Lines 10-14) the virtual tunnel as a communication bypass between the server and the client so as to increase the throughput between the server and the client (larger windows allow higher throughput) (Col 7, Lines 27-36).

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 1,2,4,6,9-11, and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toporek et al. (US 6,460,085) in view of Sridhar et al. (US 6,266,701).

20. The Examiner would like to note that the claims in this section have been ordered in accordance with their dependencies to simplify reading the rejections, since some claims now depend from claims with higher numbering.

21. With regard to claims 2,10, and 16, Toporek et al. (Toporek, hereafter) discloses a communicating system for relaying a communication between a server and a client, comprising: a receiving device (satellite gateway) receiving data transmitted from the server to the client (Col 11, Lines 13-14); a converting device (translation module) (Col 11, Lines 36-38) converting a protocol of the received data (TCP) into another protocol (XTP, modified TCP or XTP-like protocol) on a transmission control protocol (Col 11, Lines 48-51), the another protocol allowing a larger amount of data to be transferred at a time (larger windows allow higher throughput) (Col 7, Lines 27-36); and a transmitting device transmitting data to a network continuously using the another protocol (Col 11, Lines 10-14). Toporek fails to specifically disclose a multiplexing device multiplexing

data of multiple connections of the another protocol converted by said converting device and that the data transmitted is data multiplexed by said multiplexing device.

Sridhar et al. (Sridhar, hereafter) discloses a multiplexing device used to combine information into a single data stream for transmission (Sridhar, Col 6, Lines 3-5). This would be particularly advantageous for accessing a web page, since multiple concurrent streams are needed under TCP, but they could be multiplexed into a single data stream to reduce overhead (Sridhar, Col 12, Lines 25-39).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a multiplexing device in the system disclosed by Toporek in order to combine multiple connections into a single data stream as a means to reduce overhead. Reducing the overhead will improve the effective throughput of the network and speed up the transfer of user data.

22. With regard to claims 1,9, and 15, Toporek further discloses a buffer buffering data transmitted from the server to the client and accelerating data output from the server (Col 7, Lines 27-36) so as to increase a throughput assigned to the connection to the client by the server (Server can get a linear increase in throughput for an increase in windows size when using the satellite protocol)(Col 17, Lines 33-52).

23. With regard to claim 4, Toporek further discloses an idling device (rate control module) performing an idling operation (queue for later delivery) corresponding to a resource assigned to the client, wherein said transmitting device transmits data after the idling operation is completed (delivered later) (Col 10, Lines 60-63).

24. With regard to claims 6, 11, and 17, Toporek discloses a communicating system for relaying a communication between a server and a client, comprising: a receiving device (satellite gateway) receiving data from a network (Col 11, Lines 13-14), the data obtained by converting a protocol (TCP) of data transmitted from the server to the client into another protocol (XTP, modified TCP or XTP-like protocol) on a transmission control protocol (Col 11, Lines 48-51), the another protocol allowing a larger amount of data to be transferred at a time (larger windows allow higher throughput) (Col 7, Lines 27-36) and transmitted to the network continuously using the another protocol (Col 11, Lines 10-14); a converting device (translation module) converting the protocol of the data onto the original protocol (Col 11, Lines 6-8); and a transmitting device transmitting the data converted by said converting device to the client (Col 11, Lines 10-14). Toporek fails to specifically disclose multiplexing data of multiple connections of the another protocol, that the data transmitted is data multiplexed by said multiplexing device, or a demultiplexing device demultiplexing the received data.

Sridhar et al. (Sridhar, hereafter) discloses a multiplexing device used to combine information into a single data stream for transmission (Sridhar, Col 6, Lines 3-5). This would be particularly advantageous for accessing a web page, since multiple concurrent streams are needed under TCP, but they could be multiplexed into a single data stream to reduce overhead (Sridhar, Col 12, Lines 25-39). Sridhar further discloses a demultiplexing device that is needed in order to demultiplex information received from the remote system (Sridhar, Col 6, Lines 3-8). The combination of the multiplexer and demultiplexer allows multiple connections to be combined into a single data stream for

transmission over the satellite network with reduced overhead, and converted back into a format which the client can read at the receiving end. This will increase the effective throughput of the network since less bandwidth is lost transmitting overhead.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a multiplexing device and a demultiplexing device in the system disclosed by Toporek in order to combine multiple connections into a single data stream as a means to reduce overhead on the satellite link, and separate the connections at the receiving end. Reducing the overhead will improve the effective throughput of the network and speed up the transfer of user data.

25. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toporek et al. (US 6,460,085) in view of Kirkby et al. (US 6,671,285)

26. With regard to claim 5, while the system disclosed by Toporek shows substantial features of the claimed invention (discussed above), it fails to disclose a charging device performing a charging process for a service provider of the server, wherein said receiving device receives a request from the client through the network, wherein said charging device determines whether or not the request from the client is a request to be issued to the server, wherein when the request from the client is the request to be issued to the server, said charging device charges the service provider.

Kirkby et al. (Kirkby, hereafter) teach a method of charging network users for use of certain network resources. Kirkby discloses that customers (Service providers or end users) (Kirkby, Col 5, Lines 7-12) who need wide bandwidth are willing to pay extra

for this service (Kirkby, Col 2, Lines 35-40). The virtual tunnel disclosed by Toporek uses a satellite link that provides significantly higher bandwidth than a conventional communications link. Using the tunnel over the satellite link would significantly speed up transfers of large quantities of data. Adding a charging device to charge the service provider for use of the tunnel, in exchange for the increased bandwidth would be advantageous for the service providers and the owner of the link. Service quality would be improved for the servers belonging to the service provider of the link, and the link owner would profit from the usage. Since individual service providers are charged for requests that are received, the charging device must determine whether the request is to be issued to the server to ensure that service providers are only charged for traffic directed to their servers.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add a charging device to the system disclosed by Toporek in order to charge service providers for transferring data over the satellite link. Since the satellite link provides significantly improved bandwidth over conventional links, service providers would be willing to pay a premium for the improved service, creating a mutually beneficial situation for the network operator and the service providers.

27. With regard to claim 8, while the system disclosed by Toporek shows substantial features of the claimed invention (discussed above), it fails to disclose a charging device performing a charging process for a user of the client, wherein said receiving device receives a request to the server from the network, wherein said charging device

Art Unit: 2153

determines whether or not the request to the server is a request from the client, wherein when the request to the server is the request from the client, said charging device charges the user.

Kirkby et al. (Kirkby, hereafter) teach a method of charging network users for use of certain network resources. Kirkby discloses that customers (Service providers or end users) (Kirkby, Col 5, Lines 7-12) who need wide bandwidth are willing to pay extra for this service (Kirkby, Col 2, Lines 35-40). The virtual tunnel disclosed by Toporek uses a satellite link that provides significantly higher bandwidth than a conventional communications link. Using the tunnel over the satellite link would significantly speed up transfers of large quantities of data. Adding a charging device to charge users of the tunnel, in exchange for the increased bandwidth would be advantageous for the users and the owner of the link. Service quality would be improved for the users of the link, and the link owner would profit from the usage. Since individual users are charged for requests that are received, the charging device must determine which client the request originated from to ensure that users are only charged for requests they issue.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add a charging device to the system disclosed by Toporek in order to charge users for transferring data over the satellite link. Since the satellite link provides significantly improved bandwidth over conventional links, users with high bandwidth needs would be willing to pay a premium for the improved service, creating a mutually beneficial situation for the network operator and the users.

28. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toporek et al. (US 6,460,085) in view of Kirkby et al. (US 6,671,285).

29. With regard to claims 13 and 14, while the system disclosed by Toporek shows substantial features of the claimed invention (discussed above), it fails to disclose charging a user of the client or a service provider of the server for a communication using the virtual tunnel.

Kirkby et al. (Kirkby, hereafter) teach a method of charging network users for user of certain network resources. Kirkby discloses that customers (Service providers or end users) (Col 5, Lines 7-12) who need wide bandwidth are willing to pay extra for this service (Kirkby, Col 2, Lines 35-40). The virtual tunnel disclosed by Toporek uses a satellite link that provides significantly higher bandwidth than a conventional communications link. Using the tunnel over the satellite link would significantly speed up transfers of large quantities of data. Charging users of the tunnel, in exchange for the increased bandwidth, as disclosed by Kirkby would be advantageous for the users and the owner of the link. Service would be improved for the users of the link, and the owner would profit from the usage. This would work equally well for clients as well as servers using the link, as clients could pay for additional bandwidth to speed up their downloads and servers could improve their upload speeds.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to charge the user of the client and/or the service provider of a server for use of the virtual tunnel over the satellite link. Since the tunnel provides

Art Unit: 2153

significantly increased bandwidth, the users would be willing to pay the owner for increased performance of file transfers.

Conclusion

30. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

31. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Strange whose telephone number is 703-305-8878. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Burgess can be reached on 703-305-4792. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2153

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ANS 10/5/2004



FRANTZ B. JEAN
PATENT EXAMINER